

REMARKS

Status of the Claims

Claims 2 and 4 are pending. Both claims are independent. In this Reply, claim 3 has been canceled without prejudice to or disclaimer of the subject matter contained therein. Applicants expressly reserve the right to file one or more continuation and/or divisional applications directed to the subject matter of canceled claim 3.

Applicants respectfully request the Examiner to reconsider and withdraw the rejection in view of the foregoing amendments and the following remarks.

Rejection Under 35 U.S.C. § 103

The rejection of claims 2-4 under 35 U.S.C. § 103(a) over U.S. Patent No. 3,594,418 ("Gilbert et al.") is respectfully traversed.

Claim 3 has been canceled. Accordingly, the rejection of claim 3 is moot and should be withdrawn.

Independent claims 2 and 4 relate to monomers that have a phenylene diamine skeleton and one or more hexafluoroisopropyl groups substituted on the phenylene diamine skeleton. In independent claims 2 and 4, the amino groups are located in a *para* position relative to each other. Applicants have unexpectedly and surprisingly discovered that the presently claimed monomers with the amino groups in a para orientation can prepare polymers exhibiting one or more of high transparency, high toughness, high homogeneity, high heat resistance and low dielectric constants.

In contrast, Gilbert et al. discloses 1-(2-hydroxyhexafluoro-2-propyl)-3,4-diaminobenzene. In this compound, the amino groups are located in a *ortho* position relative to each other.

Gilbert et al. discloses this compound as an *intermediate* for preparing benzoheterocyclic nitrogen compounds having a (2-hydroxyhexafluoro-2-propyl)

group on the benzene ring. Gilbert et al.'s final products can exhibit hypotensive activity. See col. 8, lines 3-6.

While the presently claimed monomers are isomers of Gilbert et al.'s intermediate compound, one of ordinary skill in the art would not stop Gilbert et al.'s synthesis and modify its intermediate compound to arrive at the presently claimed monomers. "[I]f the prior art merely discloses compounds as intermediates in the production of a final product, one of ordinary skill in the art would not ordinarily stop the reference synthesis and investigate the intermediate compounds with an expectation of arriving at claimed compounds which have different uses." See M.P.E.P. § 2144.09 citing *In re Lulu*, 747 F.2d 703, 223 USPQ 1257 (Fed. Cir. 1984). One of ordinary skill in the art would not have had a reason or a reasonable expectation of success to stop at Gilbert et al.'s intermediate with its amino groups in an ortho orientation and modify it to obtain the presently claimed monomers useful for preparing polymers.

Furthermore, Gilbert et al.'s intermediate compound has no measurable hypotensive properties. See the table in Example 15 and col. 8, lines 47-49. Accordingly, one of ordinary skill in the art would also have had no reason and no reasonable expectation of success to stop at Gilbert et al.'s intermediate with its amino groups in an ortho orientation and modify it to obtain compounds with hypotensive properties.

The Office is ignoring the important principle that "[h]omology and isomerism should not be automatically equated with *prima facie* obviousness because the claimed invention and the prior art must each be viewed "as a whole." See M.P.E.P. § 2144.09 citing *In re Langer*, 465 F.2d 896, 175 USPQ 169 (CCPA 1972). Viewing Gilbert et al. as a whole, one of ordinary skill in the art would see an inactive intermediate compound with no apparent use other than as an intermediate. Accordingly, one of ordinary skill in the art would have had no rational reason to investigate the intermediate to arrive at the presently claimed monomers.

For at least these reasons, the Office has ***not*** established a *prima facie* case of obviousness over Gilbert et al.

Furthermore, even if a *prima facie* case of obviousness had been established, the unexpected and surprising discovery with regard to the presently claimed monomers with the amino groups in a para orientation effectively rebuts any *prima facie* case of obviousness. As discussed above, Applicants have unexpectedly and surprisingly discovered that the presently claimed monomers with the amino groups in a para orientation can prepare polymers exhibiting one or more of high transparency, high toughness, high homogeneity, high heat resistance and low dielectric constants. The Examples demonstrate this unexpected and surprising discovery.

In particular, Example 5 demonstrates that the presently claimed monomers with the amino groups in a para orientation can prepare polymers (A), (B) and (C), which can provide transparent, tough films. Example 5 also demonstrates that the presently claimed monomers with the amino groups in a para orientation can prepare polymer (D), which can provide a tough film that is thermally stable at 400°C and has a low dielectric constant at 1 kHz of 2.8.

Example 6 demonstrates that the presently claimed monomers with the amino groups in a para orientation can prepare polymers (E), (F), and (G), which can provide highly-homogeneous, tough, transparent films.

Example 7 demonstrates that the presently claimed monomers with the amino groups in a para orientation can prepare polymers (H), (I), and (J), which can provide tough fluorine-containing polymer films. The polymers (H), (I), and (J) exhibited high heat resistances of 465°C, 450°C, and 420°C, respectively, in terms of 5% weight reduction temperature and low dielectric constants at 1 MHz of 2.8, 2.6, and 2.4, respectively.

In contrast, Gilbert et al. does not disclose or suggest that its intermediate compound can prepare polymers exhibiting one or more of high transparency, high toughness, high homogeneity, high heat resistance and low dielectric constants. Indeed, the compounds prepared in Gilbert et al. are ***not polymers***.

Therefore, for at least the reasons discussed above, withdrawal of the obviousness rejection over Gilbert et al. is respectfully requested.

Conclusion


In view of the foregoing amendments and remarks, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned at (202) 624-2845 would be appreciated since this should expedite the examination of the application.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket # 038788.58040US).

Respectfully submitted,

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J. D. Evans
Registration No. 26,269
Mary R. Bram
Registration No. 59,556

CROWELL & MORING LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844
JDE/MRB:moi (doc. #11627314)